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DOCTORAL DISSERTATIONS ON THE MANAGEMENT AND ECOLOGY OF FISHERIES

SPECIAL SCIENTIFIC REPORT: FISHERIES No. 31

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Explanatory Note

The series embodies results of investigations, usually of restricted scope, intended to aid or direct management or utilization practices and as guides for administrative or legislative action. It is issued in limited quantities for the official use of Federal, State or cooperating agencies and in processed form for economy and to avoid delay in publication.

Washington, D. C.
July 1950

United States Department of the Interior
Oscar L. Chapman, Secretary
Fish and Wildlife Service
Albert M. Day, Director

Special Scientific Report - Fisheries

No. 31

DOCTORAL DISSERTATIONS ON THE MANAGEMENT AND ECOLOGY OF FISHERIES

Prepared in the Branch of Fishery Biology

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INTRODUCTION

This list is composed of titles of theses written between 1934 and 1949 on subjects related to the ecology and management of fisheries. All theses are on file in the libraries of the institutions where they were accepted.

In 1947, Lawson* began a compilation by asking for information from each of the institutions listed in Gustav Swanson and Lee E. Yeager's "Colleges and Universities Offering Courses in Wildlife Management, 1946-1947" (Fish and Wildlife Service, Wildlife Leaflet 296, August 1947). Several hundred titles of doctors' and masters' theses were received and organized for publication. In 1949 Hotchkiss** added titles from "Doctoral Dissertations Accepted by American Universities, 1933-1934" to "...1947-1948" (The H. W. Wilson Co., New York, 1934 to 1948). These titles on wildlife have been published in Wildlife Review, No. 59, February, 1950. Hotchkiss found many theses on fisheries that had not been listed and brought them to the attention of the Branch of Fishery Biology.

The list is reasonably complete for doctors' theses through 1948. It is incomplete for doctors' theses in 1949 and contains no masters' theses. Lack of published lists, our failure to examine some published lists, and our failure to secure solicited information account for this incompleteness. Information regarding omissions and errors, and institutions, theses, and publications not included, is solicited.

* William D. Lawson, Ohio Cooperative Wildlife Research Unit
** Neil Hotchkiss, Editor, Wildlife Review, Fish and Wildlife Service

DISEASES AND PARASITES
(See also TAXONOMY, Kimpel; TECHNIQUES, Smith)

BAKER, JAMES A. Tuberculosis of fish. PhD, Cornell, 1939.

BONHAM, KELSHAW. Some monogenetic trematodes of Puget Sound fishes. PhD, Univ. of Washington, 1937.

DEGIUSTI, DOMINIC LAWRENCE. The life cycle of Leptorthynchoides thecatus Linton an acanthocephalan of fish. PhD, Wisconsin, 1944.

DETURK, WILLIAM ERNEST. The parasites and commensals of some crabs of Beaufort, North Carolina. PhD, Duke, 1940.

GUNTHER, FRANCIS A. Fish-killing principles of Euphorbiaceae species Croton californicus Mull. Arg. and Eremocarpus setigerus Benth. PhD, Calif., Los Angeles, 1947.

HARDCASTLE, AARON BASCOM. The genus Eimeria, with special reference to the species parasitic in marine fishes. PhD, Duke, 1942.

HART, JOHN F. Cestoda from fishes of Puget Sound. PhD, Univ. of Washington, 1935.

LLOYD, LOWELL C. Some digenetic trematodes from Puget Sound fish. PhD, Univ. of Washington, 1937.

LOWELL, RALPH D. Studies on the host-parasite relationships between a trematode Metacercaria (Posthodiplostomum sp.) and a fish host. 236 p. PhD, Illinois, 1943.

MEYER, MARVIN C. A revision of the leeches (Piscicolidae) living on fresh water fishes of North America. PhD, Univ. of Illinois, 1939.

MIZELLE, JOHN D. New species of trematodes from the gills of Illinois fishes. Univ. of Ill. Zoological laboratory contributions, no. 489. Published also in the American Midland naturalist, 17: 785-806, Sept. 1936. PhD, Illinois, 1937.

MONSMA, EDWIN Y. A study of the water molds of the Lydell State fish hatchery at Comstock Park, Michigan. PhD, Michigan State College, 1936.

DISEASES AND PARASITES - Continued

MOORE, DONALD VINCENT. Studies on the life history and development of certain Acanthocephala of the order Archiacanthocephala (Meyer, 1931). PhD, Rice, 1942.

NIGRELLI, ROSS F. The morphology, cytology and life history of Oodinium ocellatum Brown, a dinoflagellate parasitic on marine fishes. PhD, New York, 1936.

RUCKER, ROBERT RAYMOND. A study of saprolegnia infections among fish. PhD, Univ. of Washington, 1944.

STEEN, EDWIN B. Studies on the morphology, taxonomy, and life cycles of fish bladder flukes (Trematoda: Gorgoderidae). PhD, Purdue, 1938.

TIDD, WILBUR M. Studies on the life history of a parasitic Copepod, Lernaea carassii Tidd. PhD, Ohio State, 1938.

TIFFNEY, WESLEY N. A study of species of Saprolegnia attacking fish. PhD, Harvard Univ., 1936.

WOODBURY, LOWELL ANGUS. A quantitative study of parasites of fishes with special reference to Clinostomum marginatum in the perch of Walsh Lake, Michigan. PhD, Univ. of Michigan, 1940.

ECOLOGY

(See also GAME FISH, Wilder: LIFE HISTORY STUDIES, Frey, Koster, Odell; LIMNOLOGY, Ball; PLANKTON, Pierce)

ANDREWS, HARRY L. An ecological study of living forms in the kelp beds of Monterey Bay and Carmel Bay, California. PhD, Univ. of Illinois, 1938.

BLAIR, ARTHUR A. Factors affecting growth of the scales of salmon (Salmo salar). PhD, Toronto, 1938.

DENDY, JACK STILES. The fate of animals in stream drift when carried into lakes. PhD, Michigan, 1943.

DEXTER, RALPH W. The marine communities of a tidal inlet at Cape Anne, Massachusetts: a study in bioecology. PhD, Univ. of Illinois, 1938.

DOAN, KENNETH HENRY. Some meteorological and limnological conditions as factors in the abundance of certain fishes in Lake Erie. PhD, Ohio State Univ., 1941.

DOUDOROFF, PETER. The resistance, reactions, and acclimatization of some marine fishes to changes of temperature. PhD, Univ. of California, 1941.

ELSON, PAUL F. Effects of current, temperature and light on the movements of speckled trout. PhD, Univ. of Toronto, 1939.

FRENCH, JOHN WINSLOW. The effect of temperature on the retention of a maze habit in fish. PhD, Princeton, 1942.

GRIBBLE, LLOYD R. Reactions of brook lampreys to various lights. PhD, West Virginia, 1935.

GUNTER, GORDON PENNINGTON. Studies on marine fishes of Texas: relative abundance and cyclic behavior related to salinity and temperature. PhD, Texas, 1945.

HEWATT, WILLIS G. Ecological studies on selected marine intertidal communities of Monterey Bay. PhD, Stanford Univ., 1935.

KERSWILL, CHARLES JAMES. Some environmental factors limiting growth and distribution of the quahaug, Venus mercenaria L. PhD, Univ. of Toronto, 1941.

LAGLER, KARL FRANK. Ecological studies of turtles in Michigan with special reference to fish management. PhD, Univ. of Michigan, 1940.

LINDEMAN, RAYMOND LAUREL. Ecological dynamics in a senescent lake. PhD, Univ. of Minnesota, 1941.

MARSHALL, NELSON. A study of the life history and ecology of Notropis chalybaeus (Cope) supplemented with data on other cyprinids in Florida. PhD, Univ. of Florida, 1941.

MARTIN, WILLIAM R. The mechanics of environmental control of body form in fishes. PhD, Michigan, 1948.

METCALF, ISAAC STEVENS HALSTEAD. The influence of a shore community on the distribution of certain fishes in Lake Erie with especial reference to the white bass. PhD, Western Reserve Univ., 1940.

MOORE, GEORGE AZRO. Studies on the adaptations of fishes to the silty waters of the great plains. PhD, Univ. of Michigan, 1942.

MOORE, WALTER GUY. Studies on the oxygen requirements of certain fresh-water fishes, with special reference to winter conditions. PhD, Univ. of Minnesota, 1941.

MCDOUGALL, KENNETH DOUGAL. Sessile invertebrates of Beaufort, North Carolina. A study of settlement, growth and seasonal fluctuations among pile-dwelling organisms. PhD, Duke Univ., 1942.

PENNAK, ROBERT W. The ecology of the psammolittoral organisms of some Wisconsin lakes, with special reference to the Tardigrada, Copepoda, and Rotatoria. PhD, Univ. of Wisconsin, 1938.

PERLMUTTER, ALFRED. Variation of American North Atlantic marine fishes correlated with the environment. PhD, Univ. of Michigan, 1941.

PRATT, HAROLD P. Ecology of the trout of the Gunnison River. PhD, Univ. of Colorado, 1938.

REIF, CHARLES BRADDOCK. A study of Minnesota stream communities. PhD, Univ. of Minnesota, 1941.

RICKER, WILLIAM E. Studies of the limnological factors affecting the propagation and survival of the sockeye salmon, Oncorhynchus nerka, at Cultus Lake, British Columbia. PhD, Univ. of Toronto, 1936.

ROELOFS, EUGENE WOODROW. Water soils in relation to lake productivity. PhD, Michigan State College, 1941.

ROGERS, HAROLD M. The estuary as a biological habitat, with special reference to the smelt, Osmerus mordax (Mitchill). PhD, Univ. of Toronto, 1939.

SCOTT, GRACE WINNIFRED WORKMAN. Certain aspects of the behaviour of frog tadpoles and fish with respect to temperature. PhD, Toronto, 1943.

SHAPIRO, SIDNEY. Geographic variation in Fundulus diaphanus, a Cyprinodontid fish. 137 p. PhD, Michigan, 1947.

SMITH, GEORGE F. M. Some factors limiting the distribution and size of the starfish, Asterias vulgaris (Verrill). PhD, Univ. of Toronto, 1939.

ECOLOGY - Continued

SOLMAN, VICTOR EDWARD FRICK. The ecological relations of waterfowl with special reference to predatory fish. PhD, Toronto, 1942.

STARRETT, WILLIAM C. An ecological study of the minnows of the Des Moines River, Boone County, Iowa. PhD, Iowa State, 1948.

TARZWELL, CLARENCE M. Environmental improvement in trout streams: a problem in applied ecology. PhD, Univ. of Michigan, 1936.

ZINN, DONALD JOSEPH. An ecological study of the interstitial microfauna of some marine sandy beaches. PhD, Yale, 1942.

FAUNAS AND MANUALS
(See also CRUSTACEA, Carl)

ADDAIR, JOHN. The fishes of the Kanawha river system in West Virginia and some factors which influence their distribution. PhD, Ohio, 1945.

BLACK, JOHN DAVID. The distribution of the fishes of Arkansas. PhD, Univ. of Michigan, 1940.

CHAPMAN, WILBERT MCL. Oceanic fishes from the northeastern Pacific ocean collected by the International Fisheries Commission. PhD, Univ. of Washington, 1937.

GERKING, SHELBY DELOS. The distribution of the fishes of Indiana. PhD, Indiana Univ., 1944.

GREENE, CARROLL W. The distribution of Wisconsin fishes. PhD, Univ. of Michigan, 1934.

JOHNSON, RAYMOND EARL. The distribution of Nebraska fishes. PhD, Univ. of Michigan, 1942.

KELLEY, TIM K. The commercial fishery of Washington. PhD, Washington, Seattle, 1947.

MILLER, ROBERT RUSH. The fishes of the relict waters of the Pleistocene Death Valley stream system. PhD, Univ. of Michigan, 1945.

FAUNAS AND MANUALS - Continued

RANEY, EDWARD C. The distribution of the fishes of the Ohio drainage basin of Western Pennsylvania. PhD, Cornell, 1939.

RICHARDSON, LAURENCE R. The fresh-water fishes of south-eastern Quebec. PhD, McGill Univ., 1935.

FOOD AND FOOD ORGANISMS
(See also CRUSTACEA, Hasler)

CLEVELAND, MAURICE M. Nutritive studies on white fish meals. PhD, Massachusetts, 1934.

CUMINGS, HARRY W., JR. A histological study of the effects of vitamin E deficiency on the guppy, Lebistes reticulatus. PhD, Illinois, 1941.

DONALDSON, LAUREN R. Experimental studies in the nutrition of the Chinook salmon with special reference to histological changes in the pancreas. PhD, Washington, Seattle, 1939.

DUNHAM, DONALD WEST. Studies on the ecology and physiology of the fresh-water jellyfish, Craspedacusta sowerbii. PhD, Ohio, 1941.

EVANS, GERTRUDE. The relation between vitamins and the growth and survival of goldfishes in homotypically conditioned water. PhD, Chicago, 1936.

FROHNE, WILLIAM C. Limnological relations of insects to certain emergent aquatic plants. PhD, Michigan, 1937.

JOHNSON, WALTER H. The food and feeding of the herring (Clupea harengus Linn.). PhD, Univ. of Toronto, 1937.

MONK, CECIL RAY. Marine harpacticoid copepods from California. PhD, Calif., L. A., 1942.

MCLAREN, BARBARA A. The nutrition of rainbow trout. PhD, Wisconsin, 1947.

RICE, NOLAN E. The nutrition of Flabellula mira Schaeffer. PhD, Duke, 1934.

SMITH, M. W. The fertilization of fresh water with an organic fertilizer. PhD, Toronto, 1934.

FOOD AND FOOD ORGANISMS - Continued

VELASQUEZ, GREGORIO T. On the viability of Algae obtained from the digestive tract of the gizzard shad, Dorosoma cepedianum (Le Sueur). PhD, Michigan, 1939.

GAME FISH
(See also TAXONOMY, Mottley; LIFE HISTORY STUDIES, Royce)

CARLANDER, KENNETH DIXON. The walleyes, Stizostedion vitreum vitreum (Mitchill), of Lake of the Woods, with especial reference to the commercial fisheries. PhD, Univ. of Minnesota, 1943.

GREENBERG, BERNARD. Some relations between territory, social hierarchy, and leadership in the green sunfish. PhD, Chicago, 1947.

LANGLOIS, THOMAS H. A study of the small-mouth bass Micropterus dolomieu Lacepede in rearing ponds in Ohio. PhD, Ohio, 1935.

SCOTT, DONALD C. A study of a stream population of rock bass. PhD, Indiana Univ., 1948.

SIGLER, WILLIAM F. The life history and management of the white bass Lepibema chrysops (Rafinesque), in Spirit Lake, Iowa. PhD, Iowa, 1947.

WILDER, DONALD GEORGE. A comparative study of anadromous and fresh-water populations of the eastern speckled trout (Salvelinus fontinalis). PhD, Univ. of Toronto, 1944.

MANAGEMENT
(See also ECOLOGY, Lagler; GAME FISH, Sigler)

COOPER, GERALD P. Studies of the propagation, breeding habits and growth of certain forage fishes of eastern North America: a contribution to forage fish management. PhD, Univ. of Michigan, 1938.

LEONARD, LEONARD L. International regulation of fisheries. Washington, 1944, 203 p. PhD, Columbia, 1945.

RAYNER, HEDLEY JOHN. The development of a management policy for the rainbow trout of the Finger Lakes. PhD, Cornell, 1941.

SMITH, LLOYD LYMAN. A fisheries management program for the waters of the Huron Mountain Club. PhD, Univ. of Michigan, 1943.

MANAGEMENT - Continued

WEBSTER, DWIGHT ALBERT. Fishery management studies of Connecticut lakes. PhD, Cornell, 1944.

WESTMAN, JAMES ROSS. A consideration of population life-history studies in their relation to the problems of fish management research; with special reference to the small-mouthed bass, Micropterus dolomieu Lacepede; the lake trout, Cristivomer namaycush (Walbaum); and the mud minnow, Umbra limi (Kirtland). PhD, Cornell, 1941.

MORPHOLOGY
(See also ECOLOGY, Martin; CRUSTACEA, Cronin; LIFE HISTORY STUDIES, Deason)

DENNY, MARTHA. The lateral line system of the teleost, Fundulus heteroclitus. PhD, Radcliffe, 1936.

DOBBIN, CATHERINE N. A comparative study of the air-bladders of some families of fishes of New York and other eastern states. PhD, Cornell, 1939.

GABRIEL, MORDECAI L. Factors affecting the number and form of vertebrae in Fundulus heteroclitus. PhD, Columbia, 1944.

GARRETT, FREDERIC DAUGHERTY. The morphology of the corpuscle of Stannius of teleostean fishes. PhD, Cornell, 1940.

HOAR, WILLIAM S. The thyroid gland of the Atlantic salmon. PhD, Boston, 1939.

LEVENSTEIN, IRVING M. Studies of the endocrines of teleosts. II. The cytology of the pituitary gland of two varieties of goldfish (Carassius auratus L.), with special reference to variable factors in the gland which may possibly be related to the different morphological types. PhD, New York, 1938.

NELSON, EDWARD M. The comparative morphology of the weberian apparatus in the family Catostomidae. PhD, Wisconsin, 1948.

OWEN, BRADFORD BRECKENRIDGE. The morphology of certain marine teleost kidneys. PhD, Harvard, 1940.

RAY, DIXY L. The peripheral nervous system of Lampanyctus leucopsaurus with comparative notes on other Iniomi. PhD, Stanford, 1946.

MORPHOLOGY - Continued

TASKER, ROY C. The morphology and transformation of the gonopodium of the viviparous top minnow Platypoecilus maculatus. PhD, Cornell, 1934.

TAYLOR, ARDELL NICHOLS. Studies on the germinal vesicles of the toad, fish, and salamander. PhD, Texas, 1943.

POLLUTION

BENDER, CHARLES RICHARD. A study of some micro-organisms surviving water chlorination. PhD, Iowa State, 1942.

BROOKS, PHILLIPS MOORE. The effects of sulfur dioxide on the aquatic plant, Elodea. PhD, Stanford, 1943.

CHIPMAN, WALTER A. The role of pH in determining the toxicity of ammonium compounds. PhD, Missouri, 1934.

ELLISOR, LEWIE O. A toxicological investigation of nicotine on the goldfish and the cockroach. PhD, Iowa State, 1936.

HERNDON, LYLE KERMIT. Mitigation of the industrial pollution of West Virginia streams. PhD, Ohio, 1940.

LAUZIER, LOUIS. Analyse polarographique et polarometrique de l'oxygène dissous dans l'eau de mer et les eaux des rivières. 99 p. PhD, Laval, 1946.

MUSGRAVE, PAUL N. Habitat limitations of certain aquatic insects and their possible relation to a study of stream pollution. PhD, West Virginia, 1936.

OESTING, RALPH B. Studies on biological conditioning of water. I. Modified Van Slyke procedure for oxygen and carbon dioxide determinations on water. Physiological zoology, 7:542-9, Oct. 1934. II. The role of calcium in biological conditioning. Biological bull., 68:314-26, Apr. 1935. III. Modified procedure for determining the nitrogen distribution of proteins involved. P.p. PhD, Chicago, 1936.

PARTANSKY, ALEXANDER M. A study of anaerobic fermentation of sulfite waste liquor. To appear as: Anaerobic fermentation of sulfite waste liquor by bacteria of fresh water muds, in National academy of sciences proc., Mar. 1936. PhD, Washington, Seattle, 1936.

POLLUTION - Continued

PAULUS, JOHN HAROLD. A comparison of the methods used to differentiate between chlorine and chloramine residuals in water treatment. PhD, Iowa, 1942.

RINTELEN, JOSEPH C., JR. The study of the solubility of a series of organic compounds in water at various temperatures. PhD, Duke, 1936.

VIVIAN, JOHNSON EDWARD. Absorption of chlorine in water and caustic. PhD, Mass. Tech., 1945.

WHITNEY, RAY POWELL. Absorption of sulfur dioxide in water. PhD, Mass. Tech., 1945.

WILSON, PHILIP JOHNSON. Purification of an industrial waste by electrolysis. PhD, Pittsburgh, 1941.

POPULATION
(See GAME FISH, Scott)

VALUES
(See LIMNOLOGY, Eschmeyer)

TAXONOMY
(See also FAUNAS AND MANUALS, Chapman; SHELLFISH, Frizzel)

BAILEY, REEVE M. A systematic revision of the centrarchid fishes, with a discussion of their distribution, variations, and probable interrelationships. PhD, Univ. of Michigan, 1938.

BOLIN, ROLF L. Studies on California Cottidae: an analysis of the principles of systematic ichthyology. PhD, Stanford Univ., 1934.

BOWMAN, HARVEY B. Further notes on the margined mad tom, Rabida insignis Richardson, and notes on a kindred species, Noturus flavus Rafinesque. PhD, Cornell Univ., 1936.

CURRAN, HOWARD WESLEY. A systematic revision of the gerrid fishes referred to the genus Eucinastomus, with a discussion of their distribution and speciation. PhD, Michigan, 1943.

TAXONOMY - Continued

GOSLINE, WILLIAM ALONZO. Studies on South American catfishes (Nematognathi). PhD, Stanford, 1942.

HERALD, EARL STANNARD. Studies on the classification and interrelationships of the American pipefishes. PhD, Stanford, 1943.

KIMPEL, HARRY G. Studies on the taxonomy of the genus Neodactylogyrus, with descriptions of new species, and the immunity of fresh-water fishes to gill trematodes (Gyrodactyloidea). PhD, Illinois, 1939.

MCALPIN, ARCHIE JUSTUS. Paleapsephurus wilsoni a new polyodontid fish from the upper Cretaceous of Montana, with a discussion of allied fish, living and fossil. PhD, Michigan, 1941.

MOTTLEY, C. MCC. Biometrical and experimental studies in the taxonomy of Kamloops trout, Salmo kamloops, Jordan. PhD, Toronto, 1934.

PHYSIOLOGY
(See also FOOD, Donaldson; CRUSTACEA, Hasler, Jones; SHELLFISH, Walzl)

ABRAMOWITZ, ALEXANDER A. The physiology of the innervation of fish melanophores. PhD, Harvard, 1935.

ANDREWS, CATER W. The effect of heat on the light behavior of fish. PhD, Toronto, 1947.

BALLENTINE, ROBERT GEORGE. Studies in the dehydrogenase systems of marine eggs. PhD, Princeton, 1940.

BENNINGTON, NEVILLE L. The spermatogenesis of Betta splendens, the siamese fighting fish. PhD, Northwestern, 1934.

BERKOWITZ, PHILIP. The response of fish (Lebistes reticulatus) to gonad and gonadotropic hormones. PhD, New York, 1940.

BLACK, EDGAR CLARK. The transport of oxygen by the blood of freshwater fish. PhD, Pennsylvania, 1940.

BOOS, BR. CLETUS S. F.S.C. An investigation of the pancreatic proteinase of the shark, Carcharinus obscurus. PhD, Catholic, 1943.

PHYSIOLOGY - Continued

BROWN, FRANK A. Color changes in crustaceans with special reference to Palaemonetes. PhD, Harvard, 1934.

BUTLER, PHILIP ALAN. Modification of the normal seasonal cycle by means of pituitary hormones in the common goldfish, Carassius auratus L. PhD, Northwestern, 1940.

CLARKE, ROBERT W. The maintenance of water equilibrium in fish with special reference to renal regulation. PhD, New York, 1934.

DANIELSON, RAGNAR N. An experimental study of chromatophores and color change with special attention to cyprinid fishes. PhD, Minnesota, 1936.

EVERSOLE, WILBURN J. Effect of steroid hormones on sexual development in fish, (Lebistes reticulatus). PhD, New York, 1940.

FERGUSON, FREDERICK PALMER. Reactions of caudal-band melanophores in Fundulus heteroclitus, with special reference to the effect of temperature on the rate of pigment concentration. PhD, Minnesota, 1943.

FOSTER, KENDALL W. The blue phase in the color changes of fish. PhD, Harvard, 1936.

JAMES, MARIAN F. Histological changes in the gonads of the bluegill, Lepomis macrochirus Rafinesque and of the largemouth bass, Huro salmoides (Lacepede) accompanying season, age and condition. 99 p. PhD, Illinois, 1943.

LEE, RICHARD EVERETT. The physiology of chromatophore control in two bottom-dwelling marine teleosts. PhD, Harvard, 1943.

LI, MIN-HSIN. The effects of estrogen administrations in the teleost, Xiphophorus helleri Heckel. PhD, Southern Cal., 1945.

LIPMAN, HARRY J. A contribution to the study of phosphatize activity in marine invertebrate animals. PhD, Pittsburgh, 1939.

MEYER, DALLAS K. Blood chlorides of fishes. 189 p. PhD, Missouri, 1947.

ODIORNE, JOSEPH M. Experimental alterations in the pigmentation of fishes, with special reference to Fundulus. PhD, Harvard, 1934.

PHYSIOLOGY - Continued

SANGSTER, WILLIAM. The quantitative effects of ethynyl testosterone upon the development of the gonopodium and sword of Xiphophorous helleri. PhD, Northwestern, 1943.

SCRUGGS, WALTER MERRITT. The epithelial components of the teleost pituitary gland and their seasonal changes in the carp (Cyprinus carpio, L.) and goldfish (Carassius auratus, L.). PhD, Harvard, 1942.

TRIMBERGER, GEORGE W. Periods of ovulation and fertilization in Bos taurus. 43 p. PhD, Nebraska, 1948.

WALKER, THEODORE J. Olfactory discrimination of aquatic plants by Hyborhynchus notatus (Raf.). PhD, Wisconsin, 1948.

WILDING, JAMES L. The oxygen threshold of three species of fish. PhD, Indiana, 1938.

YOKOYAMA, HISAKO O. Studies on the origin, development, and seasonal variations in the blood cells of the perch, Perca flavescens. PhD, Wisconsin, 1948.

YOUNG, ROGER ARLINER. The direct effects of Roentgen rays on certain marine eggs. PhD, Pennsylvania, 1940.

CRUSTACEA

BANNER, ALBERT HENRY. The Crustacea of the orders Mysidacea and Euphausiacea of the Northeastern Pacific. 327 p. PhD, Washington, Seattle, 1944.

BROCKMAN, JOHN A., JR. Studies on Dichroa febrifuga. A method for estimating chloride. Studies on Cambarus clarkii. PhD, California Tech., 1948.

BUSCH, KARL HENRY. Embryology of the crayfish, Cambarus rusticus, Girard. PhD, Ohio, 1941.

CARL, GEORGE C. The distribution of Cladocera and free-living Copepoda in British Columbia with special reference to the Centropagidae. PhD, Univ. of Toronto, 1937.

CORRIVAULT, GEORGES W. Contribution à l'étude de la biologie du homard des eaux de la province de Quebec. PhD, Laval Univ., 1948

CRUSTACEA - Continued

CRONIN, LEWIS E. The anatomy of the male reproductive system of the blue crab, Callinectes sapidus Rathbun. 72 p. PhD, Maryland, 1946.

DAVIS, CHARLES CARROLL. The pelagic Copepoda of the northeastern Pacific Ocean. PhD, Univ. of Washington, 1940.

EDWARDS, GEORGE A. The influence of eyestalk removal on the metabolism of the fiddler crab. PhD, Harvard, 1948.

EDWARDS, RICHARD. Yorktown and Duplin Ostracoda of North Carolina and Virginia. PhD, North Carolina, 1938.

GOELLNER, KARL EUGENE. The life cycle and productivity of the crayfish Cambarus immunis Hagen. PhD, Michigan, 1943.

GOODNIGHT, CLARENCE J. A monograph of the Branchiobdellidae (Oligochaeta) of the American crayfishes. PhD, Illinois, 1939.

GRAVE, CASWELL, II. The lipides in lobster nerve. PhD, Washington, St. Louis, 1941.

HART, JOSEPHINE F. L. The larval and adult phases of certain hermit crabs (anomura) of British Columbia, with special reference to characters significant in a study of their inter-relationships. PhD, Toronto, 1937.

HASLER, ARTHUR D. The physiology of digestion in plankton Crustacea. PhD, Wisconsin, 1937.

HEATH, JAMES PROCTER. The nervous system of the kelp crab: Pugettia producta. PhD, Stanford, 1941.

HIATT, ROBERT WORTH. The biology of a grapsoid crab, Pachygrapsus crassipes Randall. PhD, California, 1942.

HOBBS, HORTON H. A contribution toward a knowledge of the crayfishes of Florida with special reference to their ecological and geographical distribution. PhD, Florida, 1940.

HOFF, CLARENCE C. A contribution to the biology and taxonomy of the ostracods of Illinois. PhD, Univ. of Illinois, 1941.

JONES, LOWELL L. Osmotic regulation in several Pacific Coast crabs and its relation to environmental factors. PhD, California, 1939.

CRUSTACEA - Continued

LANGFORD, RAYMOND R. The distribution and utilization of the limnetic crustacea of Lake Nipissing, Ontario. PhD, Univ. of Toronto, 1936.

LYLE, CLAY. The crawfishes of Mississippi, with special reference to the biology and control of destructive species. PhD, Iowa State, 1938.

MACKAY, DONALD C. G. The growth and life history of the Pacific edible crab. PhD, Stanford Univ., 1934.

ROBERTS, TILDEN W. Light and certain endogenous factors as regulators of community activity for the crayfish, Cambarus virilis Hagen. 180 p. PhD, Illinois, 1942.

TACK, PETER I. The life history and ecology of the crayfish (Cambarus immunis Hagen). PhD, Cornell, 1939.

VAN DEVENTER, WILLIAM C. Studies on the biology of the crayfish Cambarus propinquus, Girard. PhD, Illinois, 1935.

LIFE HISTORY STUDIES
(See also MANAGEMENT, Cooper; ECOLOGY, Marshall; GAME FISH, Sigler)

ANDREWS, THEODORE F. The life history, distribution, growth, and abundance of Leptodora kindtii (Focke) in western Lake Erie. PhD, Ohio, 1948.

CALHOUN, ALEXANDER JOHN. The biology of the black-spotted trout (Salmo clarkii henshawi Gill and Jordan) in two Sierra Lakes. PhD, Stanford Univ., 1943.

DEASON, HILARY J. Morphometric and life history studies of the pike-perches, Stizostedion, of Lake Erie. PhD, Univ. of Michigan, 1936.

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- Laval
- McGill
- University of Toronto

CALIFORNIA
- Stanford University
- Tech
- University of California
- University of Southern California

COLORADO
- University of Colorado

CONNECTICUT
- Yale University

DISTRICT OF COLUMBIA
- Catholic University

FLORIDA
- University of Florida

ILLINOIS
- Northwestern University
- University of Chicago
- University of Illinois

INDIANA
- Indiana University
- Purdue

IOWA
- Iowa State College
- University of Iowa

MARYLAND
- Johns Hopkins University
- University of Maryland

MASSACHUSETTS
- Boston University
- Harvard University
- Radcliff
- University of Massachusetts
- Tech

MICHIGAN
- Michigan State College
- University of Michigan

MINNESOTA
- University of Minnesota

MISSOURI
- University of Missouri

NEBRASKA
- University of Nebraska

COLLEGES AND UNIVERSITIES REPRESENTED BY THESES - Continued

NEW JERSEY
- Princeton
- Rutgers University

NEW YORK
- Columbia
- Cornell University
- New York University

NORTH CAROLINA
- Duke University
- University of North Carolina

OHIO
- Ohio State University
- University of Cincinnati
- Western Reserve University

OKLAHOMA
- University of Oklahoma

PENNSYLVANIA
- University of Pennsylvania
- University of Pittsburgh
- Bryn Mawr

RHODE ISLAND
- Brown

TEXAS
- Rice Institute
- University of Texas

WASHINGTON
- University of Washington

WEST VIRGINIA
- West Virginia University

WISCONSIN
- University of Wisconsin